WHAT IS CLAIMED IS:

1. (**amended**) A [~~method for suppressing charging of a component in a vacuum processing chamber of~~] **semiconductor device manufacturing method using** a plasma processor, the plasma processor, comprising:

a vacuum processing chamber in which plasma is generated to plasma-process an object to be processed;

a block [~~made of a conductive material and~~] having a flow path of a heat medium in an inner part thereof; and

a component in the vacuum processing chamber disposed to be in contact with the block and made at least partly of an insulative material, and

said plasma processor controlling temperature of the component in the vacuum processing chamber by circulating an insulating fluid as the heat medium in the flow path,

[~~wherein, when the insulating fluid is circulated in the flow path while the object to be processed is not in the vacuum processing chamber and no plasma is generated, pressure inside the vacuum processing chamber is controlled to a predetermined pressure while inert gas is supplied into the vacuum processing chamber, thereby suppressing increase in charged voltage of the component in the vacuum processing chamber~~] **and**

said method comprising:

carrying the object to be processed into the vacuum processing chamber, generating plasma to plasma-process the object to be processed, and carrying the object to be processed that has undergone the processing out of the vacuum processing chamber; and

between said processing of the object to be processed and processing of a subsequent object to be processed, circulating the insulating fluid in the flow path while the object to be processed is not in the vacuum processing chamber and no plasma is generated, and controlling pressure in the vacuum processing chamber to a predetermined pressure while supplying inert gas into the vacuum processing chamber.

2. (**amended**) The [~~method for suppressing charging of the component in the vacuum processing chamber of the plasma processor~~] **semiconductor device manufacturing method** as set forth in claim 1, wherein the insulating fluid is a fluorinated refrigerant.

3. (**amended**) The [~~method for suppressing charging of the component in the vacuum processing chamber of the plasma processor~~] **semiconductor device manufacturing method** as set forth in claim 1, wherein volume resistivity of the insulative material is 10^9 Ω-cm or higher.

4. (**amended**) The [~~method for suppressing charging of the component in the vacuum processing chamber of the plasma processor~~] **semiconductor device manufacturing method** as set forth in claim 3, wherein the insulative material is ceramic.

5. (**amended**) The [~~method for suppressing charging of the component in the vacuum processing chamber of the plasma processor~~] **semiconductor device manufacturing method** as set forth in claim 4, wherein the component in the vacuum processing chamber is an electrostatic chuck and the block is a lower electrode made of aluminum.

6. (**amended**) The [~~method for suppressing charging of the component in the vacuum processing chamber of the plasma processor~~]

semiconductor device manufacturing method as set forth in claim 5,

wherein the vacuum processing chamber has an upper electrode disposed in parallel with the lower electrode at a position a predeteremined distance away from the lower electrode, and the predetermined pressure is not lower than 0.6 times nor higher than 2.0 times a pressure that is calculated based on a minimum sparking condition of a Paschen's curve determined for each kind of the inert gas when a discharge distance is defined as the predetermined distance.

7. (**amended**) The [~~method for suppressing charging of the component in the vacuum processing chamber of the plasma processor~~] **semiconductor device manufacturing method** as set forth in claim 1,

wherein the inert gas is nitrogen gas.

8. (**amended**) The [~~method for suppressing charging of the component in the vacuum processing chamber of the plasma processor~~] **semiconductor device manufacturing method** as set forth in claim 7, wherein the predetermined pressure is not lower than about 13 Pa nor higher than about 40 Pa.

9. (**amended**) The [~~method for suppressing charging of the component in the vacuum processing chamber of the plasma processor~~] **semiconductor device manufacturing method** as set forth in claim 1, wherein the predetermined pressure is intermittently controlled.

10. (**amended**) The [~~method for suppressing charging of the component in the vacuum processing chamber of the plasma processor~~] **semiconductor device manufacturing method** as set forth in claim 9, wherein the intermittent pressure control is performed while a flow rate of the inert gas is varied.

11. (**amended**) The [~~method for suppressing charging of the component in the vacuum processing chamber of the plasma processor~~] **semiconductor device manufacturing method** as set forth in claim 9, wherein the intermittent pressure control is performed by a pressure control device while a flow rate of the inert gas is fixed.

12. (**amended**) A plasma processor, comprising:

a vacuum processing chamber in which plasma is generated to plasma-process an object to be processed;

a block [~~made of a conductive material and~~] having a flow path of a heat medium in an inner part thereof; and

a component in the vacuum processing chamber disposed to be in contact with said block and made at least partly of an insulative material, and

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said plasma processor controlling temperature of said component in the vacuum processing chamber by circulating an insulating fluid as the heat medium in the flow path,

wherein, when the insulating fluid is circulated in the flow path while the object to be processed is not in said vacuum processing chamber and no plasma is generated, pressure in said vacuum processing chamber is controlled to a predetermined pressure while inert gas is supplied into said vacuum processing chamber[~~, thereby suppressing increase in charged voltage of said component in the vacuum processing chamber~~].

13. The plasma processor as set forth in claim 12, wherein the insulating fluid is a fluorinated refrigerant.

14. The plasma processor as set forth in claim 12, wherein volume resistively of the insulative material is 10^9 Ω-cm or higher.

15. The plasma processor as set forth in claim 14, wherein the insulative material is ceramic.

16. The plasma processor as set forth in claim 15, wherein said component in the vacuum processing chamber is an electrostatic chuck and said block is a lower electrode made of aluminum.

17. The plasma processor as set forth in claim 16, wherein said vacuum processing chamber has an upper electrode disposed in parallel with the lower electrode at a position a predeteremined distance away from the lower electrode, and the predetermined pressure is not lower than 0.6 times nor higher than 2.0 times a pressure that is calculated based on a minimum sparking condition of a Paschen's curve determined for each kind of the inert

gas when a discharge distance is defined as the predetermined distance.

18. The plasma processor as set forth in claim 12, wherein the inert gas is nitrogen gas.

19. The plasma processor as set forth in claim 18, wherein the predetermined pressure is not lower than about 13 Pa nor higher than about 40 Pa.

20. The plasma processor as set forth in claim 12, wherein the predetermined pressure is intermittently controlled.

21. The plasma processor as set forth in claim 20, wherein the intermittent pressure control is performed while a flow rate of the inert gas is varied.

22. The plasma processor as set forth in claim 20, wherein the intermittent pressure control is performed by a pressure controlling device while the flow rate of the inert gas is fixed.

23. (New) **The semiconductor device manufacturing method as set forth in claim 1, wherein the block is made of a conductive material.**

24. (New) **The semiconductor device manufacturing method as set forth in claim 1, wherein charging of the component in the vacuum processing chamber is suppressed.**

25. (New) **The plasma processor as set forth in claim 12, wherein said block is made of a conductive material.**

26. (New) **The plasma processor as set forth in claim 12, wherein charging of said component in the vacuum processing**

chamber is suppressed.